MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

FIRST YEAR THIRD SEMESTER EXAMINATION FOR

CERIFICATE IN BUILDING TECHNOLOGY

CIVIL ENGINEERING

PHYSICAL SCIENCE

DATE: 18/12/2020   **TIME: 8.30-10.30 AM**

INSTRUCTIONS
   Answer all questions

QUESTION ONE (20 MARKS)

a)   Define the four laws of reflection   (8 marks)

b)   With aid of simple sketches explain the characteristics of images formed by concave mirrors
        when the object is at the following

   i.   Infinity

   ii.   Object beyond C

   iii.   Object at C

   iv.   Object at between C and F

   v.   Object at F

   vi.   Between F AND p   (12 marks)

QUESTION TWO (20 MARKS)

A convex Mirror of focal 9 cm produces an image on its axis 6cm away from the mirror. If the
images are 3cm high, determined by scale drawing.

a)   The object distance from the mirror.

b)   The size of the object.

(Nb) Use a suitable scale in this case is 1cm to represent 3 cm of actual length on vertical scal;e and 1 cm to represent 4 cm on horizontal scale.

QUESTION THREE (20 MARKS)

a) Define sound   (2 marks)

b) Name any 4 sources of sound   (8 marks)

c) in air the speed of sound is about 330m/s. This speed is dependent on various factors. List them   (6 marks)

d) Reflected sound is called   (2 marks)

e) In some hall sound waves are reflected from the walls, floor and ceiling. Since the echo time is short, the Echo overlaps with the original sound. The original sound this seems to be prolonged. This effect is called

QUESTION FOUR (20 MARKS)

a) Define between solids and liquids   (3 marks)

b) differentiate between solids and liquids   (4 marks)

c) With aid of a simple experiment explain how you can find the density of an irregularly stone assuming it does not suck water.   (13 marks)

QUESTION FIVE (20 MARKS)

With aid of simple sketches explain the pressure act in

a) Equally aid in all direction   (6 marks)

b) Pressure increases with depth   (8 marks)

c) Pressure in liquid takes its own level   (6 marks)